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10/718,554	11/24/2003	Tetsuya Satou	OGOH:089A	1824

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PARKHURST & WENDEL, L.L.P.  
1421 PRINCE STREET  
SUITE 210  
ALEXANDRIA, VA 22314-2805

EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/718,554

Applicant(s)

SATOU ET AL



Examiner

Marie R. Yamnitzky

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 19-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 48-50 is/are allowed.
- 6) ☒ Claim(s) 19-44 and 51-53 is/are rejected.
- 7) ☒ Claim(s) 45-47 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ ~~Certified copies of the priority documents have been received in~~ Application No. 09/913,644, which is a
3. ☒ Copies of the certified copies of the priority documents have been received in ~~this~~ National Stage application, from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/24/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The preliminary amendment filed November 24, 2003, which cancels claims 1-18 and amends claims 19-22, 25, 28, 31, 34, 37, 40, 43, 48 and 51, has been entered.

Claims 19-53 are pending.

2. Claims 19 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19: The definition of Y is confusing in first allowing Y to represent a "substituted or unsubstituted" aryl group but then reciting "and substituted with an electron-donating substituent" (emphasis added). If substitution of the aryl group represented by Y is required, then "or unsubstituted" should be deleted.

Claim 40: R3-R6 are not defined.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakaya et al. (US 5,792,557).

Nakaya et al. disclose compounds meeting the limitations of a compound represented by formula (1) as defined in present claim 19 except for the requirement that the aryl group represented by Y be substituted with an electron-donating substituent. For example, see the compounds represented by formulae VIII-23, VIII-38 through VIII-44, XI-5 through XI-9 and XI-39 through XI-43. Nakaya's compounds may be used in the luminescent layer of an organic EL device.

While the specific prior art compounds referenced above do not have an electron-donating substituent directly bonded to any of the biphenyl or fused aromatic groups, compounds having further amine substituents are disclosed in the prior art. For example, see the compounds represented by formulae XI-10 through XI-16. Amine substituents are electron-donating substituents.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make compounds similar to the specific compounds disclosed by the prior art, and within the scope of the prior art's generic formula, with the expectation that similar compounds would have similar properties and would be suitable for the purposes of the prior art. One of ordinary skill in the art at the time of the invention would have been motivated to make a variety of compounds within the scope of the prior art in order to provide a variety of compounds suitable for use in organic EL devices as taught by Nakaya et al. One of ordinary skill in the art would have reasonably expected that compounds similar to the compounds represented by formulae XI-5 through XI-9 or XI-39 through XI-43, for example, but having a substituent such as an amine substituent on each of the biphenyl or fused aromatic groups would be suitable for

the prior art purposes since compounds containing additional amine substituents are disclosed in the prior art.

5. Claims 20, 21, 43, 44 and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakaya et al. (US 5,792,557) in view of VanSlyke et al. (US 4,720,432).

Nakaya et al. disclose compounds meeting the limitations of a compound represented by formula (1) as defined in present claims 20 or 21 except for the requirement that Ar<sup>3</sup> represent a p-phenylene group (in the case of claim 20) or a m-phenylene group (in the case of claim 21). For example, see the compounds represented by formulae VIII-23, VIII-34, VIII-38 through VIII-44, XI-5 through XI-9 and XI-39 through XI-43. These compounds correspond to compounds of formula (1) as set forth in claims 20 and 21 wherein Ar<sup>3</sup> represents a biphenylene group.

Nakaya et al. disclose compounds meeting the limitations of a compound represented by formula (13) as defined in present claim 43, with claim 44 dependent therefrom, except that Nakaya's compounds have a biphenylene group rather than a phenylene group linking the two nitrogens. For example, see the compounds represented by formulae XI-7 through XI-9 and XI-39 through XI-43.

Nakaya et al. disclose a compound meeting the limitations of a compound represented by formula (15) as defined in present claim 51, with claims 52 and 53 dependent therefrom, except that Nakaya's compound has a biphenylene group rather than a phenylene group linking the two nitrogens. See the compound represented by formula XI-5.

Nakaya's compounds have hole injecting and transporting properties and may be used in the luminescent layer of an organic EL device. Nakaya's compounds have two diarylamine substituents joined by a biphenylene group whereas the compounds of present claims 20, 21, 43, 44 and 51-53 have two diarylamine substituents joined by a phenylene group.

VanSlyke et al. disclose organic EL devices and teach that compounds having hole transporting capabilities can be provided by compounds having two diarylamine substituents joined by an arylene group such as a phenylene moiety having 1-4 phenylene rings. For example, see column 8, lines 39-68.

One of ordinary skill in the art at the time of the invention would have been motivated to make compounds similar to the compounds disclosed by Nakaya et al. with the expectation that compounds similar in structure would have similar properties and could be used for the same purpose as Nakaya's compounds. One of ordinary skill in the art at the time of the invention, having knowledge of the teachings of VanSlyke et al., would have reasonably expected that compounds similar to those disclosed by Nakaya et al. having a phenylene group joining two amino groups instead of a biphenylene group would have properties similar to the properties of Nakaya's compounds.

Nakaya's compound of formula XI-5 further differs from the compound required by present claim 53 in that it lacks the four methoxy substituents required by the compound of claim 53. However, given Nakaya's teachings as a whole, one of ordinary skill in the art at the time of the invention would have reasonably expected that compounds similar to Nakaya's compound of formula XI-5 having methoxy substituents at various positions on the phenyl rings would have

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properties similar to the compound of formula XI-5 and could be used for the same purpose. In particular, see column 13, lines 1-48.

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 22-24 and 34-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,682,832 B2.

Claims 25-27 and 40-42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,682,832 B2.

Claims 28-30 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,682,832 B2.

Claims 31-33 and 37-39 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,682,832 B2.

Although the conflicting claims are not identical, they are not patentably distinct from each other because each set of claims is drawn to a thin film EL device comprising two

electrodes between which is sandwiched a luminescent layer containing a compound of a specified formula, with the compounds required for the devices of the present claims being within the scope of the compounds required for the devices of the patented claims. The formulae set forth in present independent claims 22 and 34 encompasses subsets of compounds encompassed by the formula of patent claim 1. The formulae set forth in present independent claims 25 and 40 encompasses subsets of compounds encompassed by the formula of patent claim 2. The formula set forth in present independent claim 28 encompasses a subset of compounds encompassed by the formula of patent claim 3. The formulae set forth in present independent claims 31 and 37 encompasses subsets of compounds encompassed by the formula of patent claim 4.

8. Miscellaneous:

In line 5 of claim 28, "aid" should read --said--.

9. Claims 48-50 are allowed.

Claims 48-50 as amended by preliminary amendment in the present application are free of the issues raised under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, during prosecution of the parent application. In addition, the examiner has reconsidered the prior art rejection applied to claims 48-50 during prosecution of the parent application and does not make the same rejection in the present application. In tetraphenyldiamine derivatives according to Nakaya et al., at least two of the phenyl groups must be further substituted with an aryl group. These derivatives correspond



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to compounds of formula (14) as set forth in independent claim 48 in which at least one of R2-R4 represents an aryl group. In contrast, R2-R4 as defined in claim 48 are not allowed to be aryl groups.

10. Claims 45-47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for Art Unit 1774 is (703) 872-9306 for all official faxes. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY  
01/30/04



MARIE YAMNITZKY  
PRIMARY EXAMINER

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